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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,326	03/16/2001	Larry W. Fullerton	ALER1460	7179

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EXAMINER	
DEPPE, BETSY LEE	

ART UNIT	PAPER NUMBER
2611	

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/811,326	<b>Applicant(s)</b> FULLERTON ET AL.	
	<b>Examiner</b> Betsy L. Deppe	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-19,22-24,26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-19,22-24,26 and 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/25/07;3/16/01 is/are: a) ☒ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 25, 2007 has been entered.

### ***Drawings***

2. The drawings were received on July 25, 2007. These drawings are acceptable.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the details of the transmitter and receiver in claim 22 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement

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sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

5. The abstract of the disclosure is objected to because it does not describe what is new in the art to which the invention pertains (i.e. UWB communication systems). The abstract filed July 25, 2007 describes the application of the invention in UWB communication systems without including what is new in the applicants' communication method or system. Correction is required. See MPEP § 608.01(b).

6. The status of co-pending applications (including but not limited to the applications on page 32, lines 10-15; page 37, lines 18-21; page 31, lines 14-15; page 40, lines 18-19; page 41, line 20; page 43, lines 5 and 21; page 46, line 10; page 48, lines 7, 18, 19) should be updated as it changes. Appropriate correction is required.

7. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 17-19, 22-24, 26 and 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s)

contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification, as originally filed, does not appear to describe the magnitude of the autocorrelation of a signal generated from the convolution of the transmitting template signal and the first pulse signal approximating zero if the first pulse signal is a burst-mode signal, as recited in claim 17, lines 4-6 and claim 22, lines 4-6.

Based on page 69, lines 7-10 and page 72, line 8 - page 76, line 6, autocorrelation relates to the type of code sequence that is used. The detailed description does not describe the autocorrelation of a signal generated from the convolution of the transmitting template signal and the first pulse signal. Furthermore, since it appears that the "first pulse signal" corresponds to a data or burst signal, the "first template signal" corresponds to  $p(t)$  (e.g. Figure 17A) and the "code sequence elements" correspond to  $c(a, T)$  (e.g. Figure 17B), the detailed description does not appear to even describe convolution of the transmitting template signal and **the first pulse signal**. Page 68, line 5 and page 71, lines 4-9 describes the **correlation** property between the "first template signal"  $p(t)$  and the "second template signal"  $m(t)$  (recited in claim 17, line 19 and claim 22, line 22).

### ***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 17, 22, 26 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Miller et al. (US Patent No. 6,834,073 B1) wherein the claims are interpreted as not including the subject matter that fails to comply with the written description requirement of 35 USC 112, first paragraph (i.e. assuming "wherein if the first pulse signal.... approximates zero" in claim 17, lines 4-6 and claim 22, lines 4-6 are deleted).

12. With regard to claims 17 and 22, Figure 3A(1) of Miller et al. discloses a transmitter operable to generate a first pulse signal (DATA(t)), a first template signal (w(t)) and a first set of code sequence elements (CODE(T)) wherein these three signals are convolved to generate an impulse train (S(t)) that is transmitted. (See Figure 4A and column 15, lines 25-40)

Furthermore, Miller et al. discloses a receiver operable to receive a composite signal comprising a multipath signal. (See Figures 3, 4B and 4C and column 12, lines 24-27). Miller et al. discloses that the receiver uses a local copy of the UWB signal without the data (see column 15, lines 46-48) wherein a UWB signal is generated by convolving a template with a codes sequence (see column 15, lines 25-29) thereby reading on the generating step recited in claim 17, lines 17-22 and claim 22, lines 17-24, respectively. Also, Miller et al. also teaches correlating the received signal with the UWB signal (via the matched filter) and decoding the detected signal (306). (See column 15, lines 46-48)

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13. With regard to claims 26 and 27, Miller et al. discloses the claimed invention including the second set of code sequence elements corresponding to the first set of code sequence elements since it is implicit that the code sequence elements in the receiver must correspond to those in the transmitter in order to accurately recover the transmitted information/data.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 18, 19, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. as applied to claims 17 and 22, respectively, above, and further in view of Lakkis (US Patent No. 7,031,371 B1). Miller et al. discloses the respective claimed inventions except for using Barker code sequences.

Lakkis teaches using Barker codes because of their low aperiodic autocorrelation sidelobes. (See column 8, line 64 - column 9, line 3) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Barker codes for the code sequence elements in Miller et al. in order to improve receiver performance and data recovery.



Acceptable  
B3D



FIG. 26

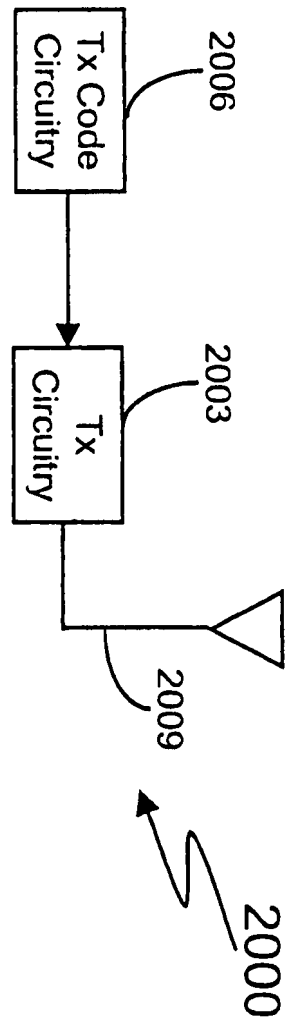
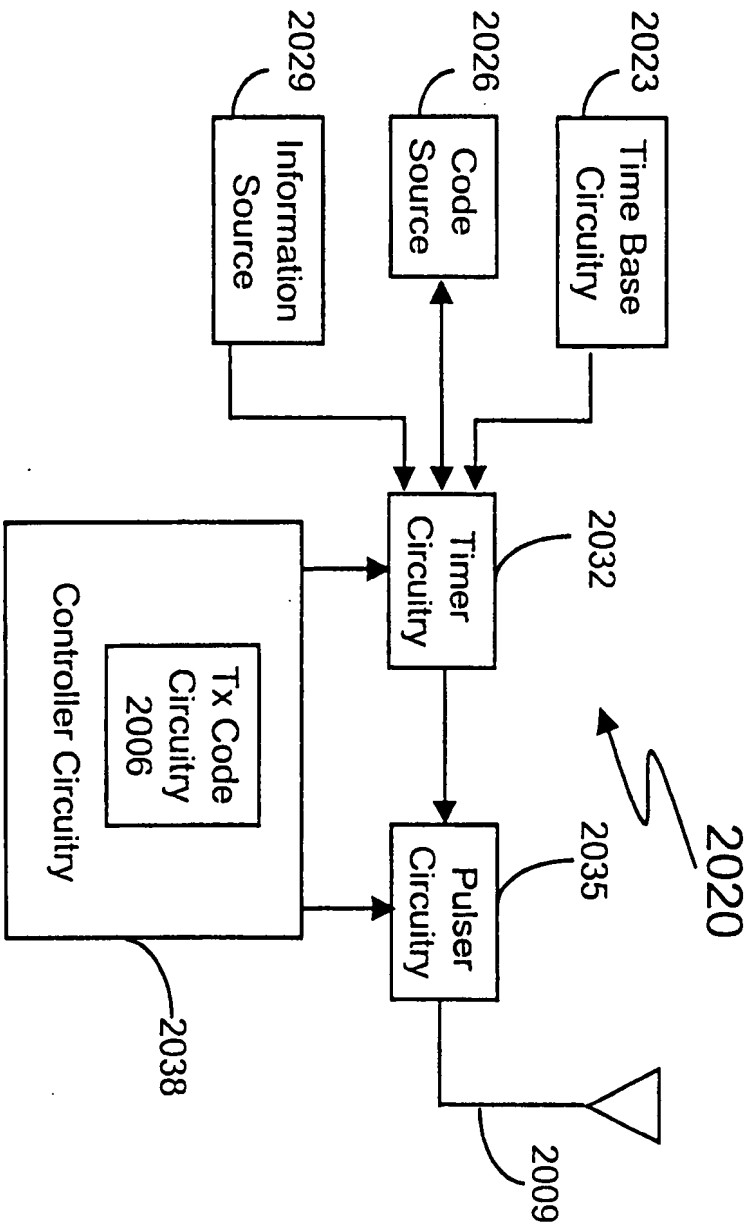


FIG. 27A



**Conclusion**

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (571) 272-3054. The examiner can normally be reached on Monday, Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Betsy L. Deppe  
Primary Examiner  
Art Unit 2611